

### REMARKS

*In a communication dated 24 January 2003, the Applicants responded to the Examiner's final rejection of claims 1, 2, 15-21, 24 and 26-28 included in an Office Action dated 24 July 2002. Moreover, the Applicants filed a Notice of Appeal on 23 January 2003, appealing the final rejection of the above-listed claims. The Examiner subsequently issued an Advisory Action dated 14 February 2003, in which the Examiner indicated that the Applicants' amendments would not be entered for consideration during Appeal, as the requested amendments purportedly raise new issues for which additional searching is required. Via submission of a Request for Continued Examination (RCE) herewith, the Applicants respectfully request withdrawal of the finality of the rejection dated 24 July 2002 and continuation of prosecution of the present application.*

*Claims 1, 2, 15-21, 24 and 26-28 are currently pending in the case. The Applicants have amended claims 1, 16 and 24, to particularly point out and distinctly claim the subject matter that Applicants regard as their invention. Moreover, the Applicants have cancelled claim 15, without prejudice. Support for the present amendments is found throughout the specification and claims, as originally filed. No new matter has been added and no claims fees are believed to be due. The Applicants strongly believe that the present Amendments, when considered in light of the below Remarks have placed the present case in condition for allowance. Accordingly, timely and favorable action is respectfully requested.*

#### Rejection under 35 USC § 112, Second Paragraph

The Examiner has rejected claim 24 under 35 USC § 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Specifically, the Examiner has rejected Applicants' inclusion of a trademark and/or trade name in said claim. The Applicants direct the Examiner's attention to the "Amendments" section of the instant paper, in which the Applicants have amended claim 24 by providing the generic terminology associated with each trademark and/or trade name included therein. In light of the present amendments, the Applicants respectfully request reconsideration and withdrawal of the rejection to claim 24 under 35 USC § 112, second paragraph.

#### Rejection under 35 USC § 102(b) over Schulein

The Examiner has rejected Claims 1, 2, 15-19, 26 and 28 under 35 USC § 102(b) as allegedly being anticipated by WO Patent Number 94/07998 to Schulein et al (hereinafter "Schulein"). The Applicants respectfully direct the Examiner's attention to the "Amendments" section of the instant paper, in which the Applicants have amended Claim 1, from which the balance of the rejected claims ultimately depend, to particularly point out and distinctly claim the subject matter that Applicants' regard as their invention. In light of the present amendments, the Applicants submit that Schulein fails to disclose each and every element of the present claims, as amended. Specifically, the Applicants submit that Schulein fails to disclose a hybrid protein comprising one or more amino acid sequences comprising a specific cellulose binding domain selected from the group consisting of CBD Cellulozome

from *Clostridium cellulovorans*, CBD E3 from *Thermonospora fusca*, CBD-dimer from *Clostridium stecorarium* XynA, CBD from *Bacillus agaradherens* and combinations thereof. Indeed, the Examiner does not dispute that Schulein's disclosure of cellulose binding domains is limited to those selected from *H. insolens*, which has been excised from the amended claims. See Paper 8; page 4. Accordingly, reconsideration and withdrawal of the rejection to Claims 1, 2, 15-19, 26 and 28 under 35 USC § 102(b) are therefore respectfully requested.

Rejection under 35 USC § 102(b) over Gilkes

The Examiner has rejected Claims 1-2, 15-19, 21 and 28 under 35 USC § 102(b) as allegedly being anticipated by WO Patent Number 93/05226 to Gilkes et al (hereinafter "Gilkes"). The Examiner's rejection is respectfully traversed. The Applicants respectfully direct the Examiner's attention to the "Amendments" section of the instant paper, in which the Applicants have amended Claim 1, from which the balance of the rejected claims ultimately depend, to particularly point out and distinctly claim the subject matter that Applicants regard as their invention. In light of the present amendments, the Applicants submit that Gilkes fails to disclose each and every element of the present invention, and amended claim 1. Specifically, Gilkes fails to disclose a fabric softening protein hybrid having an amino acid sequence comprising a specific cellulose binding domain selected from CBD Cellulozome from *Clostridium cellulovorans*, CBD E3 from *Thermonospora fusca*, CBD-dimer from *Clostridium stecorarium* XynA, CBD from *Bacillus agaradherens* and combinations thereof. Rather, as the Examiner correctly notes, the disclosure of Gilkes is limited to cellulose binding domains selected from *C. fimi*, which the Applicants have expressly removed from the amended claims. See Paper No. 8; page 5. Accordingly, the Applicants respectfully request reconsideration and withdrawal of the rejection to claims 1, 2, 15-19, 21 and 28 under 35 USC § 102(b).

Rejection under 35 USC § 103(a) over Schulein in view of Gilkes in further view of Linder

The Examiner has rejected Claims 1-2, 15-21 and 26-28 under 35 USC § 103(a) as allegedly obvious over Schulein in view of Gilkes in further view of J. Biol. Chem., Vol. 271(35):21268-21272, 1996) by Linder et al (hereinafter "Linder"). The Applicants respectfully direct the Examiner's attention to the "Amendments" section of the instant communication, in which the Applicants have amended Claim 1, from which the balance of the aforementioned claims ultimately depend, to particularly point out and distinctly claim the subject matter that Applicants regard as their invention. In light of the present amendments, the Applicants respectfully submit that Schulein in view of Gilkes in further view of Linder fail to teach or suggest a fabric softening protein hybrid comprising an amino acid sequence having a specific cellulose binding domain selected from CBD Cellulozome from *Clostridium cellulovorans*, CBD E3 from *Thermonospora fusca*, CBD-dimer from *Clostridium stecorarium* XynA, CBD from *Bacillus agaradherens*, and mixtures thereof. The Examiner does not dispute that the disclosures of Schulein, Gilkes and Linder are limited to cellulose binding domains selected from *H. insolens*, *C. fimi*, *T. reesei* - all of which have been expressly

removed from the present claims, as amended. Reconsideration and withdrawal of the rejection to Claims 1-2, 15-21 and 26-28 under 35 USC § 103(a) is therefore respectfully requested.

Rejection under 35 USC § 103(a) over Schulein or Gilkes in view of Zalipsky

The Examiner has rejected Claim 24 under 35 USC § 103(a) as allegedly obvious over Schulein or Gilkes in view of WO 94/21281 to Zalipsky et al (hereinafter "Zalipsky"). The Examiner's rejection is respectfully traversed. The Applicants respectfully direct the Examiner's attention to the "Amendments" section of the instant paper, in which the Applicants have amended Claim 1, from which claim 24 ultimately depends, only to obviate the Examiner's rejection. In light of the present amendments, the Applicants submit that Schulein or Gilkes in view of Zalipsky fail to teach or suggest a fabric softening protein hybrid comprising an amino acid sequence comprising a specific cellulose binding domain selected from CBD Cellulozome from *Clostridium cellulovorans*, CBD E3 from *Thermonospora fusca*, CBD-dirner from *Clostridium stecorarium* XynA, CBD from *Bacillus agaradherens*, and combinations thereof. The Examiner has asserted that, in light of the disclosures of Schulein, Gilkes and Zalipsky, it would have been obvious to a person of ordinary skill in the art to employ a non-amino acid linking region in the claimed context. However, as the above discussion revealed, neither Schulein nor Gilkes teach or suggest a cellulose binding domain selected from the above-identified group. Further, Zalipsky's disclosure of a non-amino acid linking region, absent some motivation to use the above-identified cellulose binding domains, is insufficient to render the present application obvious. The Applicants respectfully submit that the Examiner has failed to identify a reference or group of references that teach or suggest a fabric softening protein hybrid comprising the specific cellulose binding domains of the amended claims, linked to a fabric softening protein via a non-amino acid linking region. Reconsideration and withdrawal of the rejection to Claim 24 under 35 USC § 103(a) are therefore respectfully requested.

**CONCLUSION**

Attached hereto at the conclusion of this communication is a "Version With Markings To Show Changes Made." Applicants have made an earnest effort to place the present claims in condition for allowance. WHEREFORE, entry of the amendments provided herewith, reconsideration of the claims as amended in light of the Remarks provided, withdrawal of the claims rejections, and allowance of claims 1-2, 16-21, 24, and 26-28, as amended, are respectfully requested. In the event that issues remain prior to allowance of the noted claims, then the Examiner is invited to call Applicants' undersigned attorney to discuss any remaining issues.

Respectfully submitted,

**ANDRE CESAR BAECK, ET AL**

By 

Frank Taffy, Esq.  
Attorney for Applicant(s)  
Registration No. 52,270  
(513) 634-9315

24 June 2003  
Cincinnati, Ohio  
CM1762-OAIII.doc

**VERSION WITH MARKINGS TO SHOW CHANGES MADE**

Claim 1 (Amended). A fabric softening protein hybrid comprising an amino acid sequence comprising a cellulose binding domain linked to a fabric softening protein;  
 wherein said fabric softening protein is linked to said amino acid sequence comprising a cellulose binding domain, via an amino acid and/or non-amino acid linking region;  
wherein the cellulose binding domain is selected from the group consisting of CBD Cellulozome from *Clostridium cellulovorans*, CBD E3 from *Thermonospora fusca*, CBD-dimer from *Clostridium stecorarium* XynA, CBD from *Bacillus agaradherens*, and combinations thereof.

~~Claim 15 (Amended). A fabric softening protein hybrid according to claim 1, wherein the cellulose binding domain is selected from the group consisting of CBD ConG, ConA, Cex from *Cellulomonas fimi*, CBD CBHI from *Trichoderma reesei*, CBD Cellulozome from *Clostridium cellulovorans*, CBD E3 from *Thermonospora fusca*, CBD-dimer from *Clostridium stecorarium* XynA, CBD from *Bacillus agaradherens*, CBD family 45 from *Humicola insolens* and/or mixtures thereof.~~

Claim 16 (Amended). A fabric softening protein hybrid according to claim 1 wherein the amino acid sequence comprising a cellulose binding domain is selected from ~~the group consisting of CBD family 45 from *Humicola insolens*, CBD ConG from *Cellulomonas fimi* and/or~~ CBD Cellulozome from *Clostridium cellulovorans*.

Claim 24 (Amended). A fabric softening protein hybrid according to claim 1, wherein said linking region is a polymer selected from and further wherein said non-amino linking region is a polymer selected from polyethylene glycol derivatives, nucleophilic polyethylene glycol derivatives, carboxyl polyethylene glycol derivatives, electrophilically activated polyethylene glycol derivatives, sulfhydryl-selective polyethylene glycol derivatives, heterofunctional polyethylene glycol derivatives, biotin polyethylene glycol derivatives, vinyl polyethylene glycol derivatives, silane polyethylene glycol derivatives, phospholipid polyethylene glycol derivatives, 1-ethyl-3-(3-dimethylaminopropyl) carbodiimide, N-ethyl-5-phenylisaoxolium-3-sulphonate, 1-cyclohexyl-3(2-morpholineoethyl) carbodide metho-p-toluene sulphonate, N-ethoxycarbonyl-2-ethoxy 1,2 dihydroquinoline or glutaraldehyde and mixtures thereof.  
~~PEG(NPC)2, (NH2)2-PEG, t-BOC-NH-PEG-NH2, MAL-PEG-NHS and/or VS-PEG-NHS polymers.~~